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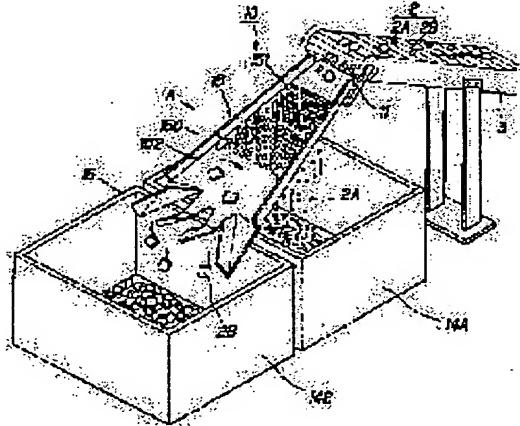
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(54) APPARATUS FOR STORING PROCESSED PIECE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an apparatus for storing processed pieces for which it is unnecessary to locate an operator at night even when operation is carried out for a long time while portable cases are used.

SOLUTION: When processed pieces 2A and 2B in which various sizes are mixed are made to fall down on an inclined plate 15 from the apex of the top part of a belt conveyer 3, the processed pieces 2A with smaller sizes fall down from larger holes 150 or smaller holes 151 provided on the inclined plate 15 and are stored in a first storing case 14A and the processed pieces 2B with larger sizes which do not fall down from the end part 16 for discharging and are stored in a second storing case 14B. By appropriately selecting shapes, sizes, numbers, positions, etc., of the larger holes 150 and smaller holes 151, the processed pieces 2 are stored equally in the first and the second storing cases 14A and 14B to extend the time when the first and the second storing cases 14A and 14B are fully filled.



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CLAIMS

[Claim(s)]

[Claim 1] In the processing piece receipt equipment which contains the processing piece with which various kinds of sizes produced by stamping of a plate mingled The ramp equipped with the bleedoff edge which has the inclined plane which feeds with said processing piece, forms in said inclined plane two or more openings which drop said processing piece below predetermined size, and emits said processing piece more than said predetermined size from an edge, Processing piece receipt equipment characterized by providing the 1st housing which contains said processing piece which falls from said opening, and the 2nd housing which contains said processing piece emitted from said bleedoff edge.

[Claim 2] It is processing piece receipt equipment of a configuration of that said two or more openings are constituted by the 1st [with the 1st bore corresponding to said predetermined size] opening group and the 2nd [with the 2nd bore smaller than said 1st bore] opening group, and said 2nd opening group is located in the upstream of said 1st opening group according to claim 1.

[Claim 3] Said bleedoff edge is processing piece receipt equipment of a configuration of having two or more projection pieces which distribute said processing piece emitted in two or more directions according to claim 1.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the processing piece receipt equipment which contains processing pieces, such as scrap wood produced by stamping of the plate by stamping machines, such as NCT (turret punch press).

[0002]

[Description of the Prior Art] Drawing 4 shows an example of conventional processing piece receipt equipment. This processing piece receipt equipment 1 is equipped with the band conveyor 3 which conveys up the processing piece 2 produced by stamping, and the housing 4 which contains the processing piece 2 which falls from the up head of this band conveyor 3. The thing of capacity with this suitable housing 4, for example, the capacity in which haulage by the haulage car is possible, is used.

[0003] When performing long duration operation by the turret punch press, for example, continuous running of 24 hours, using such processing piece receipt equipment 1, before it prepares at least two above-mentioned housings 4 and the processing piece 2 overflowed from the housing 4, it corresponded by replacing a housing 4.

[0004]

[Problem(s) to be Solved by the Invention] However, since night may come by prolonged operation according to conventional processing piece receipt equipment 1, an operator must be stationed at night and the inconvenience of becoming the trouble of full automation operation arises.

[0005] Moreover, since the processing piece 2 was only dropped from the band conveyor 3 to the housing 4 according to conventional processing piece receipt equipment 1 and the crest 20 of the processing piece 2 was made as shown in drawing 5, the time and effort of making it common manually so that the processing piece 2 may not fall in the case of haulage had been required.

[0006] Therefore, using a carriable housing, even if the object of this invention performs long duration operation, it is to offer the processing piece receipt equipment which does not have the need of stationing an operator in night.

[0007] Moreover, other objects of this invention are to offer the processing piece receipt equipment which can save the time and effort which suppresses formation of a crest as much as possible, and makes it common.

[0008]

[Means for Solving the Problem] In the processing piece receipt equipment which contains the processing piece with which various kinds of sizes which produce the 1st invention by stamping of a plate in order to attain the above-mentioned object mingled The ramp equipped with the bleedoff edge which has the inclined plane which feeds with said processing piece, forms in said inclined plane two or more openings which drop said processing piece below predetermined size, and emits said processing piece more than said predetermined size from an edge, It is characterized by providing the 1st housing which contains said processing piece which falls from said opening, and the 2nd housing which contains said processing piece emitted from said

bleedoff edge.

[0009] If the inclined plane of a ramp is fed with the processing piece with which various kinds of sizes produced by stamping of a plate mingled according to invention of the 1st of the above-mentioned configuration, the processing piece below predetermined size will fall from opening, and will be contained by the 1st housing, and the processing piece more than predetermined size will be contained by the 2nd housing from a bleedoff edge. By choosing suitably magnitude, number, etc. of openings which are formed in an inclined plane, a processing piece is uniformly contained by the 1st and 2nd housings.

[0010] Moreover, the 2nd invention is constituted by the 1st [with the 1st bore corresponding to said predetermined size in said two or more openings] opening group, and the 2nd [with the 2nd bore smaller than said 1st bore] opening group, and said 2nd opening group is characterized by considering as the configuration located in the upstream of said 1st opening group.

[0011] According to invention of the 2nd of the above-mentioned configuration, the processing piece smaller than the 2nd bore among the processing pieces below predetermined size falls from the 2nd opening group located in the upstream, and a processing piece smaller than the 1st bore falls from the 1st opening group located down-stream. Therefore, the processing piece below predetermined size distributes and falls in the 1st housing.

[0012] Moreover, according to the 3rd invention, said bleedoff edge is characterized by considering as a configuration equipped with two or more projection pieces which distribute said processing piece emitted in two or more directions.

[0013] According to invention of the 3rd of the above-mentioned configuration, in the 2nd housing, two or more projection pieces distribute in two or more directions, and the processing piece which did not fall to the 1st housing falls by them.

[0014]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail with reference to a drawing.

[0015] Drawing 1 is the perspective view of the processing piece receipt equipment concerning the gestalt of operation of this invention. This processing piece receipt equipment 10 is equipped with the band conveyor 3 which conveys up the processing pieces 2, such as scrap wood produced by stamping of the plate by stamping machines, such as NCT (turret punch press), and two housings 14A and 14B which contain the processing piece 2, the 1st and the 2nd, and the ramp 15 which distributes the processing piece 2 sent in from the up head of a band conveyor 3 to the 1st and 2nd housings 14A and 14B.

[0016] In the processing piece 2 conveyed on a band conveyor 3, various kinds of sizes, for example, comparatively small processing piece 2A, and comparatively large processing piece 2B are intermingled.

[0017] The 1st and 2nd housings 14A and 14B have a capacity carriable [with for example, a haulage car].

[0018] A ramp 15 is formed from SECC (steel plate) of 2mm of board thickness, has whenever [predetermined tilt-angle], for example, the include angle of 45 degrees, to a floor line, and is attached in the band conveyor 3 by the anchoring member 11. Moreover, a ramp 15 drills two or more osculum 150 as 1st opening group of a major diameter (for example, bore of 30mm) in the downstream of the pars intermedia between an upper bed and a soffit, and is drilling two or more stomata 151 as 2nd opening group of a minor diameter (for example, bore of 15mm) in the upstream of pars intermedia. The configuration of an osculum 150 and a stoma 151, magnitude, a number, a location, etc. are determined that the processing piece 2 is uniformly distributed to the 1st and 2nd housings 14A and 14B based on the configuration of the processing piece 2, magnitude, etc. Moreover, the ramp 15 protruded the distribution pin 152 of the shape of a cylinder with a diameter [for distributing the processing piece 2 right and left] of 10mm in the center of the osculum 150 bottom, and has established the breadth-like bleedoff edge 16 in it at last the processing piece 2 contained by the soffit of a ramp 15 at 2nd housing 14B is emitted.

[0019] Drawing 2 is the front view of the ramp 15 in which the direction view of A of drawing 1 is shown. As mentioned above, two or more osculum 150 and stomata 151 are drilled, the distribution pin 152 protrudes, and the bleedoff edge 16 is established in the ramp 15. This

bleedoff edge 16 is explained with reference to drawing 2. The bleedoff edge 16 has formed the projection wafer 160,160 of a triangle-like couple in the center of the soffit of a ramp 15. The inside of this projection wafer 160 is carrying out bending formation of the standing-up piece 160a, respectively. This standing-up piece 160a and side side 160b of the outside of the projection wafer 160 have the work which drops the processing piece 2 a center and ahead [F]. The concave side 161 located between the projection wafers 160,160 of a couple has the work which drops the processing piece 2 to Back B. Moreover, the projection large piece 162,162 of a triangle-like couple is formed in right and left of the bleedoff edge 16. The inside of this projection large piece 162 is carrying out bending formation of the standing-up piece 162a, respectively. This standing-up piece 162a has the work which drops the processing piece 2 ahead [F]. Moreover, side side 162b of the outside of the projection large piece 162 has the work which drops the processing piece 2 to a center and Back B. Therefore, the bleedoff edge 16 has the work which it distributes [work] all around and drops the processing piece 2 as a whole.

[0020] Drawing 3 is the development view of a ramp 15. A ramp 15 is formed by the approach explained below. That is, after a ramp 15 cuts a steel plate in the configuration shown in this drawing, it drills two or more osculum 150 and stoma 151, and drills hole 152a for setting up the distribution pin 152. Next, piece section of top 15a, the piece sections 15b and 15b of a side, and the standing-up pieces 160a and 162a are bent to 90-degree upper part by the bending line shown with the broken line of this drawing. Moreover, it projects so that it may become the trough which has whenever [tilt-angle / of 15 degrees] by the bending line shown with the alternate long and short dash line of this drawing, a wafer 160,160 is bent, it projects so that it may become the crest which has whenever [tilt-angle / of 15 degrees] by the bending line shown with the two-dot chain line of this drawing, and the large piece 162,162 is bent. Then, the distribution pin 152 is set up to hole 152a. Thus, a ramp 15 is formed.

[0021] Next, an operation of processing piece receipt equipment 10 is explained. for example, the processing piece 2 which various kinds of sizes, such as scrap wood, entered, and was mixed by stamping of the plate by stamping machines, such as NCT (turret punch press), — A and B arise. On a band conveyor 3, processing piece 2A and 2B are conveyed up, and fall from the up head of a band conveyor 3 to a ramp 15. From the osculum 150 or stoma 151 prepared in the ramp 15, small processing piece 2A of size falls dispersedly from an osculum 150 and a stoma 151, and is mostly contained by common at 1st housing 14A. Large processing piece 2B of the size which did not fall from an osculum 150 and a stoma 151 is distributed all around by the distribution pin 152 and the bleedoff edge 16, and is mostly contained at 2nd housing 14B common. And the processing piece 2 is uniformly contained by the 1st and 2nd housings 14A and 14B. The reuse to a plate etc. is presented with the processing piece 2 contained by the 1st and 2nd housings 14A and 14B after that.

[0022] According to such above-mentioned processing piece receipt equipment 10, the processing piece 2 is uniformly contained by the 1st and 2nd housings 14A and 14B by choosing suitably the configuration of an osculum 150 and a stoma 151 prepared in a ramp 15 based on the configuration of the processing piece 2, magnitude, etc., magnitude, a number, a location, etc.

[0023] Moreover, by arranging the stoma 151 with a small bore to the upstream, and arranging the osculum 150 with a large bore to the downstream Still smaller processing piece 2A of size also in processing piece 2A with smaller size It falls in upstream one. Large processing piece 2A of size Since small processing piece 2A of size distributes and falls in 1st housing 14A since it falls in down-stream one, and the crest of processing piece 2A is hard to be formed, it is mostly contained by common at 1st housing 14A, and the time and effort made common can be saved.

[0024] Moreover, since it falls dispersedly and the crest of processing piece 2B cannot be easily formed in 2nd housing 14B of the distribution pin 152 and the bleedoff edge 16, processing piece 2B with larger size is mostly contained by common at 2nd housing 14B, and can save the time and effort made common.

[0025] Therefore, even if it performs prolonged operation, using a carriable housing since the processing piece 2 can be contained until the 1st and 2nd housings 14A and 14B fill, the

processing piece receipt equipment which does not have the need of stationing an operator in night can be offered.

[0026] In addition, this invention is not limited to the above-mentioned operation gestalt, but various operation gestalten are possible for it. For example, although the distributed pin 152 was formed in the one osculum 150 bottom, more than one may be prepared between an osculum 150 and an osculum 150 and between a stoma 151 and a stoma 151. Moreover, it may consider only as either hole of an osculum 150 or a stoma 151, and the distributed pin 152 may be formed between holes. Moreover, the configuration of an osculum 150 and a stoma 151 may not be restricted circularly, but a triangle, a square, and a polygon are sufficient as it. Moreover, an osculum 150 and a stoma 151 are not formed in a ramp 15, but it is still better also considering a housing only as 2nd housing 14B. Thereby, although both processing piece 2A of the smaller one and processing piece 2B of the larger one are contained by 2nd housing 14B, they can distribute and fall in 2nd housing 14B by the distribution pin 152 and the bleedoff edge 16, and can suppress formation of the crest of a processing piece as much as possible, and receipt effectiveness is made as for them to size.

[0027]

[Effect of the Invention] Using a carriable housing, since a processing piece is uniformly contained by the 1st and 2nd housings by choosing the magnitude of opening, a number, etc. suitably according to the 1st invention as explained above and time amount until it fills becomes long, even if it performs prolonged operation, the processing piece receipt equipment which does not have the need of stationing an operator in night can be offered.

[0028] Moreover, according to the 2nd invention, since the 2nd opening group with a small bore has been arranged to the upstream of the 1st opening group with a large bore, and a processing piece distributes and it falls to the 1st housing, the processing piece receipt equipment which can save the time and effort which suppresses formation of a crest as much as possible, and makes it common can be offered.

[0029] Moreover, according to the 3rd invention, since a processing piece distributes and falls in two or more directions in the 2nd housing by two or more projection pieces, the processing piece receipt equipment which can save the time and effort which suppresses formation of a crest as much as possible, and makes it common can be offered.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view of the processing piece receipt equipment concerning this invention.

[Drawing 2] It is the front view of the ramp in which the direction view of A of drawing 1 is shown.

[Drawing 3] It is the development view of the ramp concerning this invention.

[Drawing 4] It is the perspective view showing an example of conventional processing piece receipt equipment.

[Drawing 5] It is drawing for explaining the trouble of conventional processing piece receipt equipment.

[Description of Notations]

2, 2A, 2B Processing piece

3 Band Conveyor

10 Processing Piece Receipt Equipment

14A The 1st housing

14B The 2nd housing

15 Ramp

16 Bleedoff Edge

150 Osculum

151 Stoma

152 Distribution Pin

160 Projection Wafer

162 Projection Large Piece

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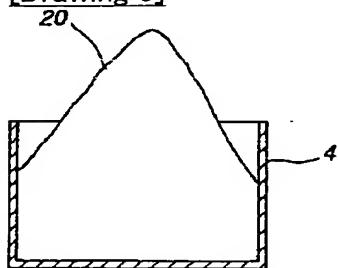
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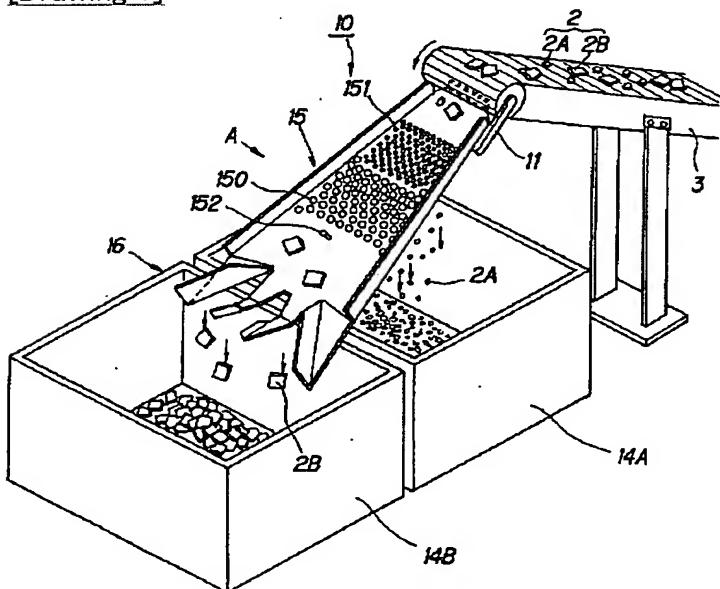
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DRAWINGS

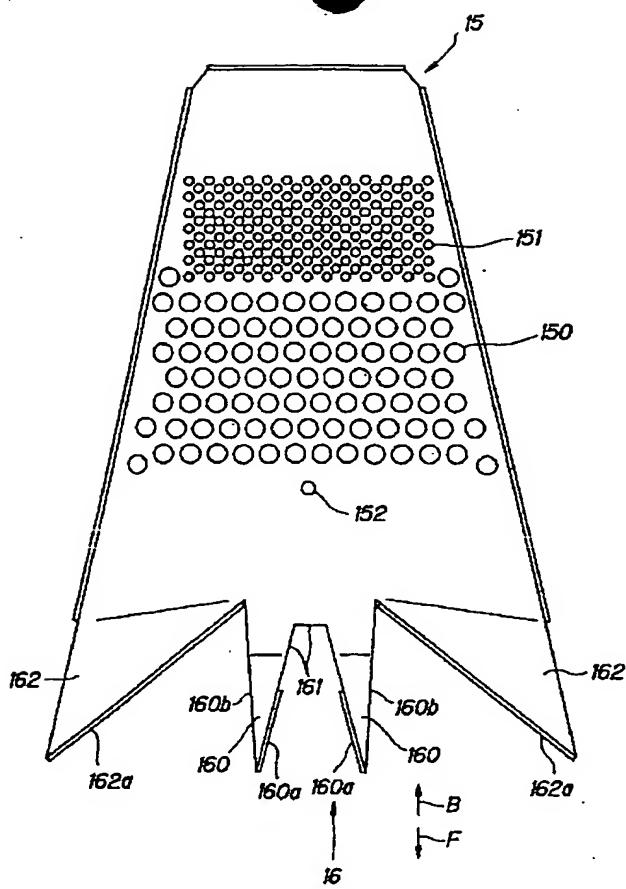
[Drawing 5]



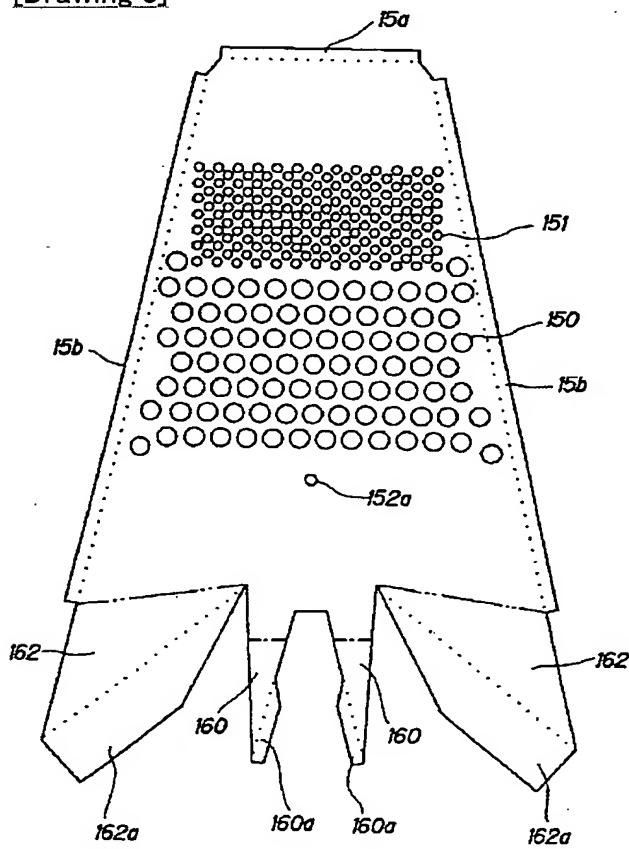
[Drawing 1]



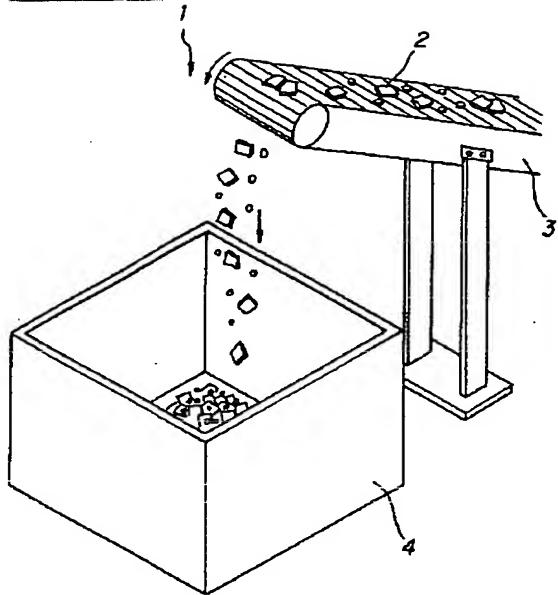
[Drawing 2]



[Drawing 3]



[Drawing 4]



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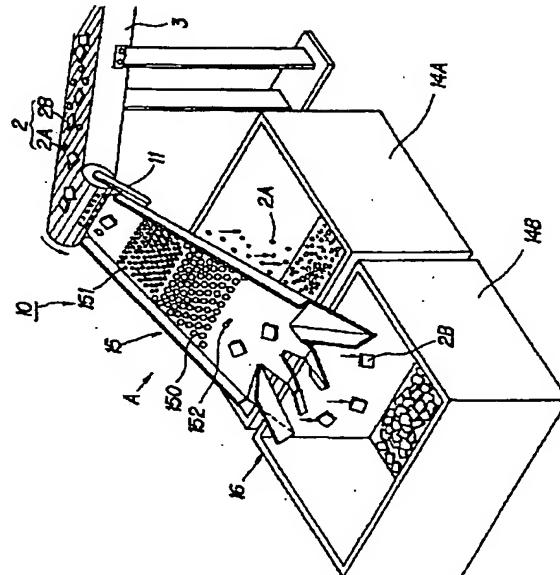
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(54)【発明の名称】 加工片収納装置

(57)【要約】

【課題】 連搬可能な収容箱を使用しながら、長時間運転を行っても夜間に作業者を配置する必要のない加工片収納装置を提供する。

【解決手段】 各種のサイズの入り混ざった加工片2 A, 2 Bが、ベルトコンベア3の上部先端から傾斜板1 5に落下すると、サイズの小さい方の加工片2 Aは、傾斜板1 5に設けた大孔1 5 0又は小孔1 5 1から落下して第1の収納箱1 4 Aに収納され、第1の収納箱1 4 Aに落下しなかったサイズの大きい方の加工片2 Bは、放出端部1 6から落下して第2の収納箱1 4 Bに収納される。大孔1 5 0及び小孔1 5 1の形状、大きさ、数、位置等を適宜選択することにより、加工片2は第1及び第2の収納箱1 4 A, 1 4 Bに均等に収納され、第1及び第2の収納箱1 4 A, 1 4 Bが満杯になるまでの時間が長くなる。



【特許請求の範囲】

【請求項1】 板材の打抜き加工によって生ずる各種のサイズの入り混じった加工片を収納する加工片収納装置において、

前記加工片を給送する傾斜面を有し、所定のサイズ以下の前記加工片を落下させる複数の開口を前記傾斜面に形成し、前記所定のサイズ以上の前記加工片を端部から放出する放出端部を備えた傾斜板と、

前記開口から落下する前記加工片を収納する第1の収納箱と、

前記放出端部から放出された前記加工片を収納する第2の収納箱と、

を具備したことを特徴とする加工片収納装置。

【請求項2】 前記複数の開口は、前記所定のサイズに対応した第1の内径を有した第1の開口群と、前記第1の内径より小さい第2の内径を有した第2の開口群によって構成され、

前記第2の開口群は、前記第1の開口群の上流に位置している構成の請求項1記載の加工片収納装置。

【請求項3】 前記放出端部は、放出される前記加工片を複数の方向へ分散させる複数の突出片を備える構成の請求項1記載の加工片収納装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、例えば、N C T (ターレットパンチプレス)等の打抜き加工機による板材の打抜き加工によって生ずる廃材等の加工片を収納する加工片収納装置に関する。

【0002】

【従来の技術】 図4は従来の加工片収納装置の一例を示す。この加工片収納装置1は、打抜き加工によって生ずる加工片2を上方に搬送するベルトコンベア3と、このベルトコンベア3の上部先端から落下する加工片2を収納する収納箱4とを備えている。この収納箱4は、適当な容量、例えば、運搬車両による運搬が可能な容量のものが使用されている。

【0003】 このような加工片収納装置1を用いて、例えば、ターレットパンチプレスによる長時間運転、例えば、24時間の連続運転を行う場合は、上記収納箱4を少なくとも2つ用意しておき、加工片2が収納箱4から溢れる前に収納箱4に入れ替えることで対応していた。

【0004】

【発明が解決しようとする課題】 しかし、従来の加工片収納装置1によると、長時間運転によって夜間に満杯になることがあるので、夜間に作業者を配置しなければならず、無人化運転の支障になるという不都合が生じる。

【0005】 また、従来の加工片収納装置1によると、ベルトコンベア3から収納箱4へ加工片2を単に落下させるだけであるので、図5に示すように、加工片2の山20ができることから、運搬の際に加工片2がこぼれ落

ちないよう手作業で平らにするという手間を要していた。

【0006】 従って、本発明の目的は、運搬可能な収納箱を使用しながら、長時間運転を行っても夜間に作業者を配置する必要のない加工片収納装置を提供することにある。

【0007】 また、本発明の他の目的は、山の形成を極力抑えて平らにする手間を省くことのできる加工片収納装置を提供することにある。

【0008】

【課題を解決するための手段】 上記目的を達成するため第1の発明は、板材の打抜き加工によって生ずる各種のサイズの入り混じった加工片を収納する加工片収納装置において、前記加工片を給送する傾斜面を有し、所定のサイズ以下の前記加工片を落下させる複数の開口を前記傾斜面に形成し、前記所定のサイズ以上の前記加工片を端部から放出する放出端部を備えた傾斜板と、前記開口から落下する前記加工片を収納する第1の収納箱と、前記放出端部から放出された前記加工片を収納する第2の収納箱とを具備したことを特徴とする。

【0009】 上記構成の第1の発明によれば、板材の打抜き加工によって生ずる各種のサイズの入り混じった加工片を傾斜板の傾斜面に給送すると、所定のサイズ以下の加工片は、開口から落下して第1の収納箱に収納され、所定のサイズ以上の加工片は、放出端部から第2の収納箱に収納される。傾斜面に設ける開口の大きさ及び数等を適宜選択することにより、加工片は、第1及び第2の収納箱に均等に収納される。

【0010】 また、第2の発明は、前記複数の開口は、前記所定のサイズに対応した第1の内径を有した第1の開口群と、前記第1の内径より小さい第2の内径を有した第2の開口群によって構成され、前記第2の開口群は、前記第1の開口群の上流に位置している構成としたことを特徴とする。

【0011】 上記構成の第2の発明によれば、所定のサイズ以下の加工片のうち、第2の内径より小さい加工片は、上流に位置する第2の開口群から落下し、第1の内径より小さい加工片は、下流に位置する第1の開口群から落下する。従って、所定のサイズ以下の加工片は、第1の収納箱内に分散して落下する。

【0012】 また、第3の発明によれば、前記放出端部は、放出される前記加工片を複数の方向へ分散させる複数の突出片を備える構成としたことを特徴とする。

【0013】 上記構成の第3の発明によれば、第1の収納箱に落下しなかった加工片は、複数の突出片によって第2の収納箱内に複数の方向へ分散されて落下する。

【0014】

【発明の実施の形態】 以下、本発明の実施の形態を図面を参照して詳細に説明する。

【0015】 図1は本発明の実施の形態に係る加工片収

納装置の斜視図である。この加工片収納装置10は、例えばNCT(ターレットバンチプレス)等の打抜き加工機による板材の打抜き加工によって生ずる廃材等の加工片2を上方に搬送するベルトコンベア3と、加工片2を収納する2つの第1及び第2の収納箱14A, 14Bと、ベルトコンベア3の上部先端から送り込まれる加工片2を第1及び第2の収納箱14A, 14Bに分配する傾斜板15とを備えている。

【0016】ベルトコンベア3によって搬送されてくる加工片2には、各種のサイズ、例えば、比較の小さい加工片2Aと、比較的大きい加工片2Bとが混在している。

【0017】第1及び第2の収納箱14A, 14Bは、例えば、運搬車両によって運搬可能な容量を有している。

【0018】傾斜板15は、例えば板厚2mmのSEC(鋼板)から形成され、床面に対して所定の傾斜角度、例えば45°の角度を有してベルトコンベア3に取付け部材11によって取り付けられている。また、傾斜板15は、上端と下端との間の中間部の下流側に大径(例えば内径30mm)の第1の開口群としての複数の大孔150を穿設し、中間部の上流側に小径(例えば内径15mm)の第2の開口群としての複数の小孔151を穿設している。大孔150及び小孔151の形状、大きさ、数、位置等は、加工片2の形状、大きさ等に基づいて、第1及び第2の収納箱14A, 14Bに均等に加工片2が分配されるように決定される。また、傾斜板15は、大孔150の下側の中央には、加工片2を左右に分散するための例えば直径10mmの円柱状の分配ピン152を突設し、傾斜板15の下端に第2の収納箱14Bに収納される加工片2を放出する末広がり状の放出端部16を設けている。

【0019】図2は図1のA方向矢視を示す傾斜板15の正面図である。傾斜板15には、上述したように、複数の大孔150及び小孔151が穿設され、分配ピン152が突設され、放出端部16が設けられている。この放出端部16について図2を参照して説明する。放出端部16は、傾斜板15の下端の中央に、三角形状の一対の突出小片160, 160を設けている。この突出小片160の内側は、それぞれ起立片160aを折曲形成している。この起立片160aと、突出小片160の外側の側辺160bとは、加工片2を中央及び前方Fに落下させる働きを有している。一対の突出小片160, 160の間に位置する凹状辺161は、加工片2を後方Bに落下させる働きを有している。また、放出端部16の左右には、三角形状の一対の突出大片162, 162を設けている。この突出大片162の内側は、それぞれ起立片162aを折曲形成している。この起立片162aは、加工片2を前方Fに落下させる働きを有している。また、突出大片162の外側の側辺162bは、加工片2

2を中央及び後方Bに落下させる働きを有している。従って、放出端部16は、全体として加工片2を前後左右に分散して落下させる働きを有している。

【0020】図3は傾斜板15の展開図である。傾斜板15は、例えば、以下に説明する方法で形成される。すなわち、傾斜板15は、同図に示す形状に鋼板を切断した後、複数の大孔150及び小孔151を穿設し、分配ピン152を立設するための孔152aを穿設する。次に、上片部15a、側片部15b, 15b、起立片160a, 162aを同図の破線で示す折曲線で90°上方に折曲する。また、同図の一点鎖線で示す折曲線で例えば15°の傾斜角度を有する谷となるよう突出小片160, 160を折曲し、同図の二点鎖線で示す折曲線で例えば15°の傾斜角度を有する山となるよう突出大片162, 162を折曲する。その後、孔152aに分配ピン152を立設する。このようにして傾斜板15が形成される。

【0021】次に、加工片収納装置10の作用を説明する。例えばNCT(ターレットバンチプレス)等の打抜き加工機による板材の打抜き加工によって廃材等の各種のサイズの入り混ざった加工片2A, Bが生じる。加工片2A, 2Bは、ベルトコンベア3によって上方に搬送され、ベルトコンベア3の上部先端から傾斜板15に落下する。傾斜板15に設けた大孔150又は小孔151よりサイズの小さい加工片2Aは、大孔150及び小孔151から分散して落下し、第1の収納箱14Aにほぼ平らに収納される。大孔150及び小孔151から落下しなかったサイズの大きい加工片2Bは、分配ピン152及び放出端部16によって前後左右に分配され、第2の収納箱14Bにほぼ平らに収納される。そして第1及び第2の収納箱14A, 14Bには、加工片2が均等に収納される。第1及び第2の収納箱14A, 14Bに収納された加工片2は、その後、板材への再利用等に供される。

【0022】このような上記加工片収納装置10によれば、加工片2の形状、大きさ等に基づいて傾斜板15に設ける大孔150、小孔151の形状、大きさ、数、位置等を適宜選択することにより、加工片2は、第1及び第2の収納箱14A, 14Bに均等に収納される。

【0023】また、上流側に内径の小さい小孔151を配置し、下流側に内径の大きい大孔150を配置することによって、サイズの小さい方の加工片2Aの中でもさらに小さいサイズの加工片2Aは、上流の方で落下し、大きいサイズの加工片2Aは、下流の方で落下するので、サイズの小さい加工片2Aは、第1の収納箱14A内に分散して落下し、加工片2Aの山が形成され難いので、第1の収納箱14Aにほぼ平らに収納され、平らにする手間を省くことができる。

【0024】また、サイズの大きい方の加工片2Bは、分配ピン152及び放出端部16によって第2の収納箱

14B内に分散して落下し、加工片2Bの山が形成され難いので、第2の収納箱14Bにほぼ平らに収納され、平らにする手間を省くことができる。

【0025】従って、第1及び第2の収納箱14A、14Bが満杯になるまで加工片2を収納することができる。運搬可能な収納箱を使用しながら、長時間運転を行っても、夜間に作業者を配置する必要のない加工片収納装置を提供することができる。

【0026】なお、本発明は、上記の実施形態に限定されず、種々な実施形態が可能である。例えば、分散ピン152を大孔150の下側に1つ設けたが、大孔150と大孔150との間や小孔151と小孔151との間に複数設けてもよい。また、大孔150か小孔151かのいずれか一方の孔のみとし、孔と孔との間に分散ピン152を設けてもよい。また、大孔150及び小孔151の形状は、円形に限らず、三角形、四角形、多角形でもよい。また、傾斜板15に大孔150及び小孔151を設けず、さらに、収納箱を第2の収納箱14Bのみとしてもよい。これにより、小さい方の加工片2A及び大きい方の加工片2Bは、共に第2の収納箱14Bに収納されるが、分配ピン152及び放出端部16によって、第2の収納箱14B内に分散して落下し、加工片の山の形成を極力抑えることができ、収納効率を大にできる。

【0027】

【発明の効果】以上説明した通り、第1の発明によれば、開口の大きさ、数等を適宜選択することにより、加工片は第1及び第2の収納箱に均等に収納されるので、満杯になるまでの時間が長くなることから、運搬可能な収納箱を使用しながら、長時間運転を行っても夜間に作業者を配置する必要のない加工片収納装置を提供することができる。

【0028】また、第2の発明によれば、内径の大きい*

*第1の開口群の上流側に内径の小さい第2の開口群を配置したので、加工片が分散して第1の収納箱に落下することから、山の形成を極力抑えて平らにする手間を省くことのできる加工片収納装置を提供することができる。

【0029】また、第3の発明によれば、加工片は複数の突出片によって第2の収納箱内に複数の方向へ分散して落下するので、山の形成を極力抑えて平らにする手間を省くことのできる加工片収納装置を提供することができる。

【図面の簡単な説明】

【図1】本発明に係る加工片収納装置の斜視図である。

【図2】図1のA方向矢視を示す傾斜板の正面図である。

【図3】本発明に係る傾斜板の展開図である。

【図4】従来の加工片収納装置の一例を示す斜視図である。

【図5】従来の加工片収納装置の問題点を説明するための図である。

【符号の説明】

2, 2A, 2B 加工片

3 ベルトコンベア

10 加工片収納装置

14A 第1の収納箱

14B 第2の収納箱

15 傾斜板

16 放出端部

150 大孔

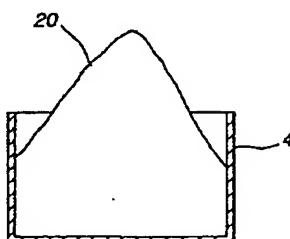
151 小孔

152 分配ピン

160 突出小片

162 突出大片

【図5】



【図1】

